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 A method for modulating a disease or condition associated with phospholipase D (PLD) initiated polymorphoneutrophil (PMN) inflammation in a subject, comprising

administering to the subject an effective anti-inflammatory amount of a lipoxin analog having the formula

$$Q_4H$$
 Q_3H
 Q_3H
 Q_3H
 Q_4H
 Q_5H
 Q_1
 Q_1
 Q_1
 Q_1
 Q_2
 Q_3
 Q_4
 Q_4
 Q_5
 Q_5

wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenvl:
- (vi) substituted phenyl

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 $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hvdroxvl:

- (vii) a detectable label molecule: or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive:

wherein Q_1 is (C=O), SO_2 or (CN), provided when Q_1 is CN, then X is absent; wherein Q3 and Q4 are each independently O, S or NH; wherein one of R2 and R3 is a hydrogen atom and the other is

- (a) H:
- (b) an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight (d) chain or branched: or
- $R_aQ_2R_b$ wherein Q_2 is -O- or -S-; wherein R_a is alkylene of 0 to 6 (e) carbons atoms, inclusive, which may be straight chain or branched and wherein R, is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom:

wherein R4 is

- (a) H;
- (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched;

wherein R₅ is

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wherein Z_1 , Z_n , Z_n , Z_n , and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y_1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_zZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a) H:
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched;

wherein T is O or S, and pharmaceutically acceptable salts thereof, such that a disease or condition associated with PLD initiated polymorphoneutrophil (PMN) inflammation in a subject is modulated.

- 2. The method of claim 1, wherein said method is performed in vitro.
- 3. The method of claim 1, wherein said method is performed in vivo.

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 A method for treating phospholipase D (PLD) initiated polymorphoneutrophil (PMN) inflammation in a subject, comprising

administering to the subject an effective anti-inflammatory amount of a lipoxin analog having the formula

wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenyl;
- (vi) substituted phenyl

$$Z_{i}$$
 Z_{ii}
 Z_{ij}
 Z_{ij}

 $\label{eq:continuous} Wherein~Z_i,~Z_{ii},~Z_{iv}~and~Z_v~are~each~independently~selected~from~-NO_2,~-CN,\\ -C(=O)-R_1,~-SO_3H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~atom,\\ -C(=O)-R_1,~$

8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl;

- (vii) a detectable label molecule; or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive:

wherein Q_1 is (C=Q), SO₂ or (CN), provided when Q_1 is CN, then X is absent; wherein Q_3 and Q_4 are each independently O, S or NH; wherein one of R, and R, is a hydrogen atom and the other is

- (a) H;
- (b) an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- (d) an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight chain or branched; or
- (e) R₂Q₂R_b wherein Q₂ is -O- or -S-; wherein R_a is alkylene of 0 to 6 carbons atoms, inclusive, which may be straight chain or branched and wherein R_b is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom;

wherein R4 is

- (a) H:
- (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched:

wherein R5 is

wherein $Z_{_{1}}$, $Z_{_{11}}$, $Z_{_{1v}}$ and $Z_{_{v}}$ are each independently selected from -NO₂, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_aZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a)
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:

wherein T is O or S, and pharmaceutically acceptable salts thereof, such that PLD initiated polymorphoneutrophil (PMN) inflammation is treated in a subject.

- 5. The method of claim 1, wherein said method is performed in vitro.
- 6. The method of claim 1, wherein said method is performed in vivo.

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 A method for modulating a disease or condition associated with phosphlipase D (PLD) initiated superoxide generation or degranulation activity in a subject, comprising

administering to the subject an effective anti-PLD amount of a lipoxin analog having the formula

$$Q_4H$$
 Q_3H
 R_2
 R_4
 R_5
 R_5
 R_6
 R_1

wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenyl;
- (vi) substituted phenyl

$$Z_{i}$$
 Z_{ij}
 Z_{ij}
 Z_{ij}

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 $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl;

- (vii) a detectable label molecule; or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive;

wherein Q_1 is (C=0), SO₂ or (CN), provided when Q_1 is CN, then X is absent; wherein Q_3 and Q_4 are each independently O, S or NH; wherein one of R, and R₃ is a hydrogen atom and the other is

- (a) H;
- (b) an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- (d) an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight chain or branched; or
- (e) R₂Q₂R_b wherein Q₂ is -O- or -S-; wherein R₂ is alkylene of 0 to 6 carbons atoms, inclusive, which may be straight chain or branched and wherein R_b is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom;

wherein R4 is

- (a) H:
- (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched:
- 30 wherein R₅ is

$$Z_{ij}$$
 Z_{ij}
 Z_{ij}
 Z_{ij}

wherein Z_i , Z_{in} , Z_{in} , Z_{iv} and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y_1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_zZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R is

- (a) H:
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:

wherein T is O or S, and pharmaceutically acceptable salts thereof, such that a disease or condition associated with PLD initiated superoxide generation or degranulation activity in a subject is modulated.

- 8. The method of claim 7, wherein said method is performed in vitro.
- 9. The method of claim 7, wherein said method is performed in vivo.

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 A method for treating phospholipase D (PLD) initiated superoxide generation or degranulation in a subject, comprising

administering to the subject an effective anti-PLD amount of a lipoxin analog having the formula

$$Q_4H$$

$$Q_3H$$

$$R_4$$

$$T$$

$$R_5$$

$$R_3$$

wherein X is R₁, OR₁, or SR₁; wherein R₁ is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenyl;
- (vi) substituted phenyl

$$Z_{i}$$
 Z_{ij}
 Z_{ij}
 Z_{ij}

wherein Z_i , Z_i , Z_i , Z_i , and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to

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8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl;

- (vii) a detectable label molecule; or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive:

wherein Q_1 is (C=0), SO_2 or (CN), provided when Q_1 is CN, then X is absent; wherein Q3 and Q4 are each independently O, S or NH; wherein one of R2 and R3 is a hydrogen atom and the other is

- (a) H:
- an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight (b) chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight (d) chain or branched; or
- (e) $R_aQ_2R_h$ wherein Q_2 is -O- or -S-; wherein R_a is alkylene of 0 to 6 carbons atoms, inclusive, which may be straight chain or branched and wherein R, is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom:

wherein R4 is

- (a) H:
- an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight (b) chain or branched:

wherein Rs is

$$Z_{i}$$
 Z_{b}
 Z_{b}

wherein Z_i , Z_{ii} , Z_{ii} , Z_{iv} and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y_1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_aZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a) H:
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:

wherein T is O or S, and pharmaceutically acceptable salts thereof, such that PLD initiated superoxide generation or granulation is treated in a subject.

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- 11. The method of claim 10, wherein said method is performed in vitro.
- 12. The method of claim 10, wherein said method is performed in vivo.
- 30 13. A packaged pharmaceutical composition for treating a disease or condition associated with phospholipase D (PLD) initiated activity in a subject, comprising:

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a container holding a therapeutically effective amount of at least one lipoxin compound having the formula

wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenyl;
- (vi) substituted phenyl

wherein Z_i , Z_u , Z_u , Z_v and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and

hydroxyl;

- (vii) a detectable label molecule; or
- a straight or branched chain alkenyl of 2 to 8 carbon (viii) atoms, inclusive;

wherein Q_1 is (C=0), SO_2 or (CN), provided when Q_1 is CN, then X is absent; wherein Q_3 and Q_4 are each independently O, S or NH; wherein one of R2 and R3 is a hydrogen atom and the other is

- (a) H:
- (b) an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight (d) chain or branched; or
- $R_aQ_2R_b$ wherein Q_2 is -O- or -S-; wherein R_a is alkylene of 0 to 6 (e) carbons atoms, inclusive, which may be straight chain or branched and wherein R, is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom:

wherein R4 is

- (a) H:
- (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched:

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wherein R, is

wherein Z_1 , Z_1 , Z_1 , Z_1 , and Z_2 are each independently selected from -NO₂, -CN, -C(=O)-R₁, -SO₃H, a hydrogen atom, halogen, methyl, -OR_x, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y_1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_aZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a) H:
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:
- wherein T is O or S, and pharmaceutically acceptable salts thereof; and instructions for using said lipoxin compound for treating a disease or condition associated with PLD initiated activity in the subject.

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 A packaged pharmaceutical composition for treating phospholipase D initiated activity in a subject, comprising:

a container holding a therapeutically effective amount of at least one lipoxin compound having the formula

$$\begin{array}{c|c} Q_4H & Q_3H & R_2 \\ \hline \\ R_4 & R_5 & R_3 \\ \hline \\ R_6 & Y_1 & \end{array}$$

wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms:
- (v) phenyl;
- (vi) substituted phenyl

$$Z_{i}$$
 Z_{ii}
 Z_{iv}

 $\label{eq:continuous} Wherein~Z_i,~Z_{ii},~Z_{iv}~and~Z_v~are~each~independently~selected~from~-NO_2,~-CN,\\ -C(=O)-R_1,~-SO_3H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen,~methyl,~-OR_x,~wherein~R_x~is~1~to~1000~km,\\ +C(=O)-R_1,~-CO_2H,~a~hydrogen~atom,~halogen~atom,~ha$

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8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl:

- (vii) a detectable label molecule; or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive:

wherein Q_1 is (C=0), SO₂ or (CN), provided when Q_1 is CN, then X is absent; wherein Q_3 and Q_4 are each independently O, S or NH; wherein one of R, and R₃ is a hydrogen atom and the other is

- (a) H;
- (b) an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- (d) an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight chain or branched; or
- (e) R_aQ₂R_b wherein Q₂ is -O- or -S-; wherein R_a is alkylene of 0 to 6 carbons atoms, inclusive, which may be straight chain or branched and wherein R_b is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom;

wherein R, is

- (a) H;
 - (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched:

wherein Rs is

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$$Z_{i}$$
 Z_{i}
 Z_{i}
 Z_{i}

wherein Z_{i} , Z_{ii} , Z_{iv} and Z_{v} are each independently selected from -NO₂, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH₂Z_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a) H:
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:

wherein T is O or S, and pharmaceutically acceptable salts thereof; and instructions for using said lipoxin compound for treating PLD initiated activity in the subject.

- 15. A packaged pharmaceutical composition for treating a disease or condition associated with phospholipase D (PLD) initiated superoxide generation or degranulation activity in a subject, comprising:
- a container holding a therapeutically effective amount of at least one lipoxin compound having the formula

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wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms;
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenyl;
- (vi) substituted phenyl

wherein Z_i , Z_i , Z_i , Z_i , and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl;

- (vii) a detectable label molecule; or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive;
- wherein Q_1 is (C=0), SO_2 or (CN), provided when Q_1 is CN, then X is absent; wherein Q_3 and Q_4 are each independently O, S or NH; wherein one of P_2 and P_3 is a hydrogen atom and the other is
 - (a) H;
 - an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched;
 - (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
 - an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight chain or branched; or
 - (e) R_aQ₂R_b wherein Q₂ is -O- or -S-; wherein R_a is alkylene of 0 to 6 carbons atoms, inclusive, which may be straight chain or branched and wherein R_b is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when R_b is 0, then R_b is a hydrogen atom:

wherein R4 is

- (a) H;
- (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched:

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$$Z_{i}$$
 Z_{ii}
 Z_{ii}
 Z_{ii}

wherein Z_i , Z_{ii} , Z_{ii} , Z_{ii} , Z_{iv} and Z_v are each independently selected from $-NO_2$, -CN, $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y_1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_zZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a) H;
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:
- wherein T is O or S, and pharmaceutically acceptable salts thereof; and instructions for using said lipoxin compound for treating a disease or condition associated with PLD initiated superoxide generation or degranulation activity in the subject.

16. A packaged pharmaceutical composition for treating phospholipase D (PLD) initiated superoxide generation or degranulation activity in a subject, comprising: a container holding a therapeutically effective amount of at least one lipoxin compound having the formula

$$\begin{array}{c|c} Q_4H & Q_2H & R_2 \\ \hline \\ R_4 & R_5 & R_3 \\ \hline \\ R_6 & Y_1 & \end{array}$$

wherein X is R_1 , OR_1 , or SR_1 ; wherein R_1 is

- (i) a hydrogen atom;
- (ii) an alkyl of 1 to 8 carbons atoms, inclusive, which may be straight chain or branched;
- (iii) a cycloalkyl of 3 to 10 carbon atoms:
- (iv) an aralkyl of 7 to 12 carbon atoms;
- (v) phenyl;
- (vi) substituted phenyl

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wherein Z_i , Z_{ii} , Z_{iii} , Z_{iv} and Z_v are each independently selected from -NO₂, -CN,

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 $-C(=O)-R_1$, $-SO_3H$, a hydrogen atom, halogen, methyl, $-OR_x$, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl;

- (vii) a detectable label molecule: or
- (viii) a straight or branched chain alkenyl of 2 to 8 carbon atoms, inclusive:

wherein Q1 is (C=O), SO2 or (CN), provided when Q1 is CN, then X is absent; wherein Q3 and Q4 are each independently O, S or NH; wherein one of R2 and R3 is a hydrogen atom and the other is

- (a) H:
- (b) an alkyl of 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched:
- (c) a cycloalkyl of 3 to 6 carbon atoms, inclusive;
- an alkenyl of 2 to 8 carbon atoms, inclusive, which may be straight (d) chain or branched; or
- (e) $R_aQ_2R_b$ wherein Q_2 is -O- or -S-; wherein R_a is alkylene of 0 to 6 carbons atoms, inclusive, which may be straight chain or branched and wherein R, is alkyl of 0 to 8 carbon atoms, inclusive, which may be straight chain or branched, provided when Rb is 0, then Rb is a hydrogen atom;

wherein R, is

(a) H:

- (b) an alkyl of 1 to 6 carbon atoms, inclusive, which may be a straight chain or branched:
- 30 wherein Re is

$$Z_i$$
 Z_i
 Z_i
 Z_i
 Z_i

wherein Z_1 , Z_{ii} , Z_{ii} , Z_{iv} and Z_v are each independently selected from -NO₂, -CN, -C(=O)-R₁, -SO₃H, a hydrogen atom, halogen, methyl, -OR_x, wherein R_x is 1 to 8 carbon atoms, inclusive, which may be a straight chain or branched, and hydroxyl or a substituted or unsubstituted, branched or unbranched alkyl group;

wherein Y_1 is -OH, methyl, -SH, an alkyl of 2 to 4 carbon atoms, inclusive, straight chain or branched, an alkoxy of 1 to 4 carbon atoms, inclusive, or CH_zZ_b where a+b=3, a=0 to 3, b=0 to 3 and Z is cyano, nitro or a halogen;

wherein R6 is

- (a) H:
- (b) an alkyl from 1 to 4 carbon atoms, inclusive, straight chain or branched:

wherein T is O or S, and pharmaceutically acceptable salts thereof; and instructions for using said lipoxin compound for treating PLD initiated superoxide generation or degranulation activity in the subject.